PABLO NATIONAL WILDLIFE REFUGE NARRATIVE REPORT January 1, 1966 to January 1, 1967

REFUGE PERSONNEL

Joseph P. Mazzoni, Refuge Manager, Moiese, Montana Frank L. Kenney, Refuge Manager, Charlo, Montana

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF SPORT FISHERIES AND WILDLIFE FISH AND WILDLIFE SERVICE Charlo, Montana

CONTENTS

_	PA	Æ
I.	General	7
		1
		1
		1
	2. Food and Cover	1
II.		2
	A. Migratory Birds	2
	B. Upland Game Birds	3
	C. Big Game Animals	2 3 3 3 3
	D. Fur Animals, Predators, Rodents, and other Mammals	3
	E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies	3
	F. Other Birds	4
		4
		4
		4
	1. Dibcabe	
III.	THE REPORT OF THE PROPERTY OF	4
		4
	The street of the state of the	4
		4
		4
	E. Planned Burning	5
	F. Fires	5
	G. Miscellaneous	5
IV.	Resource Management	5555555
	A. Grazing	5
	B. Haying.	5
	C. Fur Harvest	5
	D. Timber Removal	
		6
	F. Other Uses	
V.	Field Investigation or Applied Research	6
**		6
	B.	0
	D	
	E	
VI.	Public Relations	6
	A. Recreational Uses	6
	B. Refuge Visitors	6
	C. Refuge Participation.	7
	D. Hunting	7
	E. Violations	7
d buds on	Athen Thema	
VII.	Other Items	
	A. Items of Interest	
	B. Photographs	
	C. Signature	

PABLO NATIONAL WILDLIFE REFUGE Narrative Report

January 1, 1966 to January 1, 1967

I. GENERAL

A. Weather Conditions

Temperature and precipitation are recorded at Ninepipe Refuge, 10 airline miles south. The ice in Pablo reservoir did not begin to break up until almost the first of April. The freeze-up came again in early November making a total of about 125 days in which the refuge was not useable by waterfowl in 1966.

B. Habitat Conditions

1. Water

Pablo reservoir began the year with a pool elevation of 3205, fifteen feet higher than normal. Added to this, was a good reserve supply in Tabor, Mission and McDonald Lake reservoirs. (See the diagram of water sources)

However, irrigation needs during a dry summer and an extremely dry fall, placed such a demand on the reservoir that it had to be completely drained. This of course destroyed the trout fishery and drastically reduced the warm water species. It also caused most of the waterfowl to move to other waters making the public hunting area near the refuge almost useless.

Chronologically, the reservoir's history for 1966 was as follows:

January to April.......Ice-covered
May through July......High water levels
August through September..Rapid shrinkage
of surface due to
draw-down
October through November Extremely low
(3183.0 mark)
December.....Return to ice cover

2. Food and Cover

The 480 acres of upland provide excellent habitat for pheasants and some species of waterfowl. The dense cover of quackgrass is only lightly grazed by the 70 head of cattle pasturing it each summer. Ample growth is left for early spring nesting concealment. Willow, caragana, Russian olive and wild plum shelter patches are well distributed over the area.

The wheat farming operations adjacent to the refuge on private lands, BIA lands and the 350 acres farmed on shares for the Montana Fish and Game department, are of great value in providing browse for waterfowl in the spring and fall, and mature grain during the winter.

Throughout the spring and early summer of 1966, the water levels remained high and fairly stable, and a heavy growth of aquatic plants flourished. But, unlike Ninepipe, these plants did not thrive on the lower levels when the water receded.

As the water was drained out of the reservoir, the larger fish tried to escape down the outlet ditch. The smaller fish became concentrated in the shallow muddy pools attracting hundreds of Common and Hooded Mergansers.

This severe draw-down, of course, discouraged most water-fowl. The resident flock of Canada geese, however, found young forbes to browse on and security from the Hunter's guns on the widening shores of the reservoir.

II. WILDLIFE

A. Migratory Birds.

- 1. Whistling Swans On March 28, a migratory flock of 110 was seen flying over Pablo. In the fall, between the middle of October to the middle of November, up to 30 could be seen using the refuge.
- 2. Canada Geese A pair again nested on the artificial island. This island has produced a brood each year since it was built in 1958, or seven broods. After the first brood left the island, a second pair tried to nest, but was apparently unsuccessful. Only two immature geese were banded during the June banding operation when 87 flightless birds were captured.
- 3. Snow and White-fronted goose-use was very limited. Only one Snow Goose was known to have used the refuge in May. Ten White-fronts were recorded on the refuge in October.
- 4. <u>Ducks</u> Low water conditions plus an early freeze-up brought the total duck use of the refuge down considerably. <u>Mallards</u> used the refuge more than all the other species combined. Below is a list of the seven most commonly found ducks on the refuge and the percentage of the total days-use of each:

Mallards	3.		•			•	•				•	57%
Widgeon.			•				•	•	•			14%
Redhead				•					•			7%
Pintai:	1.						0	٠		۰		7%
C. Merga	an	S	е	r								6%

Green-winged Teal			•		3%
Blue-winged Teal.					3%
Ring-necked	• •				2%
Others					1%*

* Includes: Shoveler, Wood, Canvasback, Scaup, Goldeneye, Bufflehead, Ruddy and Hooded Merganser.

Nesting was highly successful with the hatch up 60% from last year. Mallards and blue-winged teal were the most ambitious producers. Others hatching smaller numbers included pintail, widgeon, redhead, shoveler, canvasback and gadwall.

- 5. Coot nested in moderate numbers on the refuge and a peak number of 1,000 was recorded in the fall.
- 6. Water and Marsh Birds Of this group, only the Great Blue Heron stayed through the winter. The Common Loons, the Red-necked, Eared and Western Grebes and the Double-crested Cormorant all arrived in late April and were gone by early November. An unusual, lone, Sandhill Crane showed up November 1, again this year.

B. Upland Game Birds

- 1. Ring-necked Pheasants nest, reach their peak numbers during the summer months, and then rapidly diminish during the fall and winter. The Montana Fish and Game department released 100 banded cocks near the refuge, a large proportion of which were soon in hunters' bags.
- 2. Mourning Doves visit the refuge intermittently in small numbers.

C. Big Game

Nothing to report.

D. Furbearers, Predators and Other Mammals

Two colonies of <u>Beaver</u> were active as long as the water stayed up. Their fate, after the draw-down, is unknown. <u>Muskrat</u> and <u>mink</u> populations are moderate, but <u>Weasel</u> tracks are frequently seen in the new snow. The <u>Meadow</u> and <u>Deer Mouse</u> populations are probably kept in check by the <u>Striped Skunks</u> and <u>Badgers</u> along with some of the aerial predators of the area.

E. Hawks, Eagles, Owls, Magpies, Crows and Ravens

Rough-legged Hawks were seen with unusual frequency late in the fall. Less common were the one or two <u>Duck Hawks</u> always perched on the outer middle level of the cottonwoods. Both <u>Bald</u> and <u>Golden Eagles</u> showed up for their annual feast of crippled ducks. The golden eagles found slim pickings, but the bald eagles remained to feed on the stranded fish, along with numerous <u>Magpies</u> and a few Ravens.

F. Other Birds

Over a thousand Ring-billed Gulls fed on carcasses of dead fish after the water was drained out of the reservoir. In early November a flock of 30 Snow Buntings was seen feeding on the lichns of the riprap.

G. Fish

Since no natural spawning takes place, each spring thousands of fingerling Rainbows are released from the Montana Fish and Game hatchery at Arlee. These fish grow rapidly on the bottom fauna of crustaceans, insects and smaller rough fish becoming 2-to-3 pound trout within two years. But this year, this fishery was completely destroyed when the reservoir was drained. The state fishery biologist has indicated that he may not stock it again with trout, but will allow it to return to a Bass and Yellow Perch fishery.

H. Reptiles

Painted Box Turtles were frequently seen.

I. Disease

Nothing to report.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The large, log maintenance building, constructed in 1937 has been completely removed and the area where it stood cleaned up.

B. Maintenance

Routine fence repairs, posting and clean-up was carried on during the year.

C. Plantings

None to report.

D. Collections and Receipts

None

E. Control of Vegetation

In an effort to bring the <u>Canada Thistle</u> infestation at Pablo under control, 180 acres were treated with herbicide, using

the new boom-mounted, trailer sprayer. On the areas treated, an almost complete initial kill was accomplished. However, some badly infested areas along the west side were isolated by high water and could not be reached. These will be given special attention during the coming year.

F. Fires

None

G. Miscellaneous

Plans for a fishermen's parking area have been formulated. The site selected is near the inlet spillway, a favorite fishing spot for both trout and perch fishermen.

IV. RESOURCE MANAGEMENT

A. Grazing

Each year, between the 1st and 15th of May, permittee Frank Webster turns his 70 head of cattle into the south portion of the refuge. This unit, comprising about 180 acres, is usually blocked off from the west side of the upland by a grain farmer's fence which cuts into the refuge and bisects an inlet. Rather than cross this flooded inlet, the cattle move in the other direction to the east side, then northward below the main dike to the north side where they spend the rest of the summer. Here, the inlet channel prevents the cattle from getting to the west side. Because of these physical barriers, the west side, the best grassland on the refuge, goes virtually untouched year after year.

One solution is to prevail upon the permittee to wait until the annual lowering of the water level, then drive the cattle around the same way they'd come and across the inlet into the west pasture.

A better solution, which has already been suggested to the Bureau of Indian Affairs grazing manager, is to move the offending fence to the west side of the channel leaving room between it and the highwater line for the cattle to pass around the end of the inlet. (See Map)

B. Haying

None

C. Fur Harvest

Due to low water levels, the Indian trapper has trapped only the inlet canal. His catch, here, is unknown, but would be a neglegible amount of muskrat at most.

D. Commercial Fishing

None

V. FIELD INVESTIGATIONS AND APPLIED RESEARCH

A. Census

In addition to the weekly waterfowl population surveys, a thorough waterfowl brood count was made throughout the spring and early summer. With the help of Lee Hotchkiss, student assistant from the Bison Range, much valuable information was gained on the nesting waterfowl of the area.

B. Banding

On June 22, 87 flightless geese were driven into a trap and banded. Only two of these were immature. Ten had been banded in previous years. On September 22, using the cannon net, 130 mallards and 30 pintail were caught and banded. For simplification the costs of this operation are combined with those reported in the Ninepipe report.

VI. PUBLIC RELATIONS

A. Recreational Uses

Fishing Of the 3,500 visitors on Pablo, in 1966, 2,500 were fishermen. A few were ice fishermen, others caught bullheads and yellow perch, but the majority were there to spin a cast for the big rainbows that feed near the inlet when the water in the reservoir starts to drop.

In order to allow fishermen to legally take the doomed fish trapped in the outlet canal after the complete draw-down of the reservoir, an emergency opening was put into effect. Hundreds of trout, bass, perch and bullheads became food, in this manner, instead of waste.

Previously, Pablo was open to fishing along the northeast shoreline from July 15 until February 28, excluding the waterfowl hunting season. Recently proposed fishing regulations would change this allowing fishing, in the same area, all year except during the waterfowl hunting season. Included in the new changes, are special regulations pertaining to ice fishing to protect the basic purpose of the refuge as well as provide safe-guards for the fishermen, themselves.

B. Refuge Visitors

See Ninepipe Narrative Report.

C. Refuge Participation

See Ninepipe Narrative Report.

D. Hunting

With the reservoir conditions such as they were, only a handfull of hunters used the pits early in the season. No geese were killed from the state-operated pits after October 9. By the first of November, practically all hunting ceased on the public hunting area.

E. Violations

None that we were aware of.

SIGNATURE PAGE

	Submitted by:
	Ont 2 Kenny (Signature)
	Refuge Manager (Title)
Date: January 27, 1967	
Approved, Regional Office:	Approved, National Bison Range:
Date:	Date: Juliary 27, 1967
(Signature)	(Signature)
John D. Findlay Associate Regional Director (Title)	Fife Mayer

WATERFOWL

(1) Species: 1:2: wans: Whistling Trumpeter eese: Canada Cackling Brant White-fronted Snow Blue Other acks: Mallard Black	Veeks	ц:		,				10
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		V						
Gadwall		0.						
Baldpate		422	C. Dr.	*				
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Green-winged teal								
Blue-winged teal			46	*_				
Cinnamon teal				Y.				
Shoveler				Con				
Flood	-			2.				-
Redhead					2.			
Ring-necked					***			
Canvasback					The Parket			
Scaup					200			
Goldeneye						Ep.		
Bufflehead						200		-
Ruddy						11.		
Other						-	2.	
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WATERFOWL (Continuation Sheet)

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Trumpeter		65										
Geese:	1		DEBY RIC	E T	er eventures	SHANTA IS	page 12	fant and	ore areas	950 E 200		
Canada	L	21			16	20	20	20	LLLO ULAB	5)(JE CON	
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White-fronted	1	99				and the second	VI HELD THE	SAL TOTA	Mach Brown	300 11 11	10000000000000000000000000000000000000	
Snow		-				4					EN ENT	
Blue		84										
Other			serve en		ALLEGE ENGLISHING	0.5 5 120 15						121
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Gadwall		100 Sept.		dud ahor	50	50	50	0	Ennerall	1,100	07 CJ J76 FB	
Baldpate		\$50,000	10	50	2,500	300	300	300	CONGRESS (IN)	17,220	4 67 458	10 10
Pintail		500		100	200	200	200	200		6,300		ALMES
Green-winged	teal		ONS TENA	Cans 75	100	1(4)	100	100	[G]G Marul	2,500		1/ 1/1/
Blue-winged t	teal	展 30				50	50	50		1.050		ALT
Cinnamon teal		2 全									A Comment	Allerto
Shoveler		90-0 900			100	7.50	100	160		2,800		
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Ring-necked					79	20	70	713	EVEN THE M	1.960	te un income	#
Canvasback					150	50	150	Name and Address of the Owner, where the Owner, which is the O	10.01 Letters	6,200		N.
Scaup					80	80	ner nego	80		2.240	W Comment	
Goldeneye		64			170	100	100			2.210		19/4 7
Bufflehead	444		1		60	50	50	50	2070 W-1707A	1.1270		1
Ruddy		-							pan Quin			
Other C. Merr	anser	84	114 :		20	1,000	1,550			21,110		
Total I	ucks	00 00 00 00 00 00	260	2,650	5,000	35650	3,650	3,650	Edwarta	132,020	- PA	
GOOT				50	500 (ove	er) 500	500	560		11,200		

Best possible image.

	S. S. Ores	7. 銀幣 [1 202] 200] 22 202
(5) Total Days Use:	(6) (7) Peak Number: Total Production	SUMMARY
Swans 770		Principal feeding areas
Geese the same	200 :	Cane Deportment form lands (workshed ment of the food,
Ducks 57,750	5,000	Principal nesting areas
Coots	500 '	period, a pair of C. goose were again using the island.
Clanamon teal Shoveler Wood	100	Reported by
(1) Species:	In addition to the birds listed reporting period should be added	753h, Wildlife Refuges Field Manual) on form, other species occurring on refuge during the i in appropriate spaces. Special attention should be given
(1) Species:		in appropriate spaces. Special attention should be given
(2) Weeks of	8 540 8 du 51606	1.000 1.000 1.000 57,750
Reporting Period:	Estimated average refuge popular	tions.
(3) Estimated Waterfowl Days Use:	Average weekly populations x num	aber of days present for each species.
(4) Production:	breeding areas. Brood counts sh	eed based on observations and actual counts on representative hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.
(5) Total Days Use:	A summary of data recorded under	(3).
(6) Peak Number:	Maximum number of waterfowl pres	sent on refuge during any census of reporting period.
(7) Total Production:	A summary of data recorded under	ing period : Estimated : Production

Interior Duplicating Section, Washington, D. C.
1953

3-1750 Form NR (Rev. March 1953)

WATERFOWL

REFUGE Pablo						MONTHS OF	Play	TO	August	, 1966
*	:				(2)					
	:		Weeks	of re	port	ing pe	riod			
(1)	•	: :		:	: ر	:	:	:	:	
	: 1	: 2 :	3 :	4 :	5 :	6 :	7:	8 :	9:	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	20	25	130	130	130	130	130	130	130	130
Cackling										
Brant										
White-fronted										
Snow		1								
Blue										
Other Total	20	26	130	130	130	130	130	130	130	130
Ducks:			4					1		
Mallard	750	500	500	500	1100	1100	1100	1100	1100	1100
Black	-	-				1				
Gadwall	50	50	50	50	70	70	70	70	70	20
Baldpate	300	300	250	250	400	400	400	400	1:00	400
Pintail	200	200	200	200	320	320	320	320	320	320
Green-winged teal	50				50_	50	50_	50	50	50
Blue-winged teal	200	300	300	300	500	500	500	500	500	500_
Cinnamon teal	50	100	200	200	50	50_	50	50	50	KO
Shoveler	100	100	300	300	160	160	160	160	160	160
Wood			10	10	10	10	10	10	10	10
Redhead	400	400	400	400	470	470	470	470	470	470
Ring-necked	20	20	20	20	30	30	30	30	30	30_
Canvasback	50	50	50	50	80	80	80	80	80	80
Scaup	50	20	30_	30						
Goldeneye	100	50	50	50	* = 17	111217				
Bufflehead	50	10	10	10					1000000	7
Ruddy	-	50	30	30						6 3
OtherHooded Mergani			30	30						
Common Merganser	500	500	50	50						
bbb. Total Ducks	2870	2650	2480	2480	3240	3240	3240	3240	3240	3240
Coot:	500	500	500	500	700	700	700	700	700	700

Cont. 1 (Rev. harch 1953)

WATERFOWL (Continuation Sheet)

REFUGE Pable						MONT	HS OF	Noy	TO Augus	ŧ ,	19 66
(1) :- Species :-	ıı Haş	Weeks : 12 :		repor	ting	peri	o d	18	(3) Estimated waterfowl days use	: Produ	tion Estimate: total
Swans: Whistling Trumpeter	As	massiy of	data re	toligeg mu	er (3).						
Geese: Canada Cackling	190	150	720	130	324	550	550	465	26,558		5
Brant White-fronted Snow	5200 5200		à som	Mons T	rwyst, ot	gelati bar	eent for	aach ane	100		
Other Total Ducks:	130	130	130			550	550	465	24,465	1	5
Mallard Black	1,100	1,100	1,100	1,100	500	7,000	7,000	8,000	250,250	60	360
Gadwall Baldpate	(A)	70		70	50	7,50	750	6,000	90,650	20	100
Pintail Green-winged teal	Disconsist	OWS (S-0)	2008 50	360		5-000 5-000	2,000	1,500	70,000	20	750
Blue-winged teal Cinnamon teal	505 50	900 50	508	500	7.50 20	3.0 20	300	300 20	107.00		
Shoveler Wood	160	160	166	160	350	3350	330	350	25,600	15	80
Redhead		<u>الراب</u>	4,0	47.0	3700	1,000	1,000	8,560	04 des	-10	70
Ring-necked Canvasback	- 3	80	86	80	50	50	- 50		930	- 5	39
Scaup Goldeneye		3			Profitio	Del Deer	Ing areas		15770		
Bufflehead Ruddy		230 :		9		20	20	20	37.		
Other Sooded Mergan	102	- I			LLTEC	40	40		0,50		
dddi total Dacks	3,240	3,240	3,240	3,240	3,370	11,810	11,610	19,390	624,120	186	1,070
Cost	700	700	700	(ov		750	(PS)	750	0.45,000	30	200

Total Days Use:	(6) Peak Number : T	(7) otal Production	5,396 A3,448	101 KHO	SUMMARY	609,120	190	7°68
Swans			Principal feeding	ng areas	Hearby	for lade s	ad 68. 64	entic
deese gepes 24,465	550	5	plants of reces	reols.				
Ducks 624,120	19,250	1,070	Principal nestin	ng areas	Land on	its on south	est side	20
Coots 64,000	750	200	smortals.		700		13	
Cinnamon taal Shovaler Wood	70 13 180 700	78 Tw	Reported by			Py	L.	7
(1) Species:		the birds listed	on form, other s	pecies o	ccurring	on reluge dur	ing the	
		od should be adde	d in appropriate a	spaces.				given
- Mallard Slack	to those speci	od should be adde	d in appropriate stational significational	spaces.	Special	attention sho	uld be	given
(2) Weeks of Reporting Period:	to those speci	od should be adde	d in appropriate stational significational	spaces. nce.	Special	attention sho	uld be	given
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Interior Duplicating Section, Washington, D. C.
1953

3 -1750=

MONTHS OF

3-1750 Form NR (Rev. March 1953)

WATERFOWL

REFUGE Paulo	-					MONTHS OF	September	thin	December	, 19 <u>66</u>
:			Weeks	of r	(2) e p o r t	ingn	eriod			
(1)	`		8			: :	:		:	
Species :	1 :	2 1	3 :	4 :	5	: 6 :	7 :	8 :	9 :	10
Swans:										
Whistling							4	14	26	
Trumpeter										
eese:										
Canada	879	1,000	1,000	750	250	600	1,100	1.500	1,500	41
Cackling										
Brant										
White-fronted								10		
Snow										
Blue		/								
Total Geese	879	1_000	1,000	750	250	600	1_100	1,510	1 500	Įvi
ucks:								1. (0.)		
Mallard	8,000	12,000	12,000	12 000	3_000	4_000	12,000	20,000	20,000	1.2
Black										
Gadwall									1000	
Baldpate	6,000	8,000	8_000	6_000	2,000	3_000	2,000	10_000	500	
Pintail	1,600	1.500	1.500	1.500	500	500	500	1 000	1 000	
Green-winged teal	200	200	200	300	3.0.0	500	500	1 360	1 500	Y
Blue-winged teal	200	200	200	109						
Cinnamon teal	20	20	26	20						
Shoveler	350	350	350	350						
Wood	10							4		
Redhead	2,500	200	200	200		500	500	500	500	
Ring-necked	4,870	150	150	150		1,000	500	500	200	
Canvasback	200	50	50	50					Section 1	ings Ex
Scaup					100	200				1 C
Goldeneye				-					RESCRIPTION OF	
Bufflehead										
Ruddy	50									
Other H. Merganser					150	150	150	150	300	
C. Merganser	40	200	200	200	1.500	1,500	1.500	2,000	2,000	2.00
Total Ducks	23,440	22,870	22,870	22,870	7.550	11,350	18,650	35,650	26,000	3.70
Coot	750	500	500	500	700	700	700	1,000	1,000	1,0

(Rev. march 1953) WATERFOWL (Continuation Sheet)

thru December , 19 66 REFUGE Pablo MONTHS OF September (1) Total Production: Weeks of reporting period (3) Estimated : Production (1) Species : 11 : 12 : 13 : 14 : 15 : 16 : 17 : 18 :Broods:Estimated waterfowl days use : seen : total Swans: Dear Dear nee: mesary of data resorded under (3) 518 30 Whistling Trumpeter Geese: 84,595 6 960 1,400 700 Canada Cackling Brant White-fronted Snow 119 2 Blue You Total Geese 84.724 962 1,405 700 Ducks: 15,000 1,051,400 30,000 1.000 Mallard Black Gadwall Baldpate 4400 400 50 345,800 100 100 100 65,450 Pintail Green-winged teal 1,500 1,000 300 56,700 Blue-winged teal 4,900 560 Cinnamon teal Shoveler 12,950 200 200 50 Wood 70 Redhead 37.100 100 100 Ring-necked 100 54,040 100 Canvasback 2.450 2,800 Scaup 50 50 Goldeneye 100 100 1,400 Bufflehead 20 140 Ruddy 350 AND H. Merganser 100 20 9,590 50 C. Merganser 700 1,000 100 90,580 1,62 0 33,650 17,820 0 Total Ducks 1.736,280 ALLE. 46,690 100 100 20 (Sver) Coot

Coot	TOO TOO SO	(80,090
(5) Total Days Use:	Peak Number: Total Produ	uction SUMMARY
Swans 518	30	Principal feeding areas Geese did considerable feeding on
Geese 84,714		exposed shorelines. Ducks fed on adjacent grainfields.
Ducks 1,736,280 :	35,650	PANNOTPAN MACKING WAYS Mergansers were attracted by fish
Coots 46,690	1,000	concentrated in shallow water.
	soo see 20	Reported by
Cinnemon teal		200
	TRUCTIONS (See Secs. 7531	through 7534, Wildlife Refuges Field Manual)
(1) Species:	reporting period should	s listed on form, other species occurring on refuge during the be added in appropriate spaces. Special attention should be given al and national significance.
(2) Weeks of	,000 15,000 1,000	1,051,400
Reporting Period:	Estimated average refuge	e populations.
(3) Estimated Waterfowl Days Use:		ons x number of days present for each species.
(4) Production:	breeding areas. Brood	ng produced based on observations and actual counts on representative counts should be made on two or more areas aggregating 10% of the mates having no basis in fact should be omitted.
(5) Total Days Use:	A summary of data record	ded under (3).
(6) Peak Number:	Maximum number of waters	fowl present on refuge during any census of reporting period.
(7) Total Production:	A summary of data record	ded under (4).

WATERFOWL (Continuation Sheet) thru bacenber

3 -1750a

MIGRATOR IRDS

(other than waterfowl)

Refuge....Pablo

Months of part Jan Till April 195.66

(1) Species	(2 First		Peak N	3) umbers		4) Seen		(5) Production	ob begnin	(6) Total
Common Name	Number	Date	Number		Number	Date	Number Colonies	Total #	Total Young	Estimate Number
. Water and Marsh Birds:		1/30	d mis	37.		l leave			elgse xas	Golden Buck h
Common Loon Red-nacked Grobe Rand Grobe Mester Grobe Double Grosted Cormoran Groat bilus leron	1 20 2 10 1 Previous	4/20 4/20 4/27 4/20 4/30 Period	10 20 2 14 20 1	1/27 1/20 1/27 1/27 1/30 1/30	Still 1	resent.			Leo	bemok siqaaM sevan word
	VG	Nas Light Raported	M TERES	SHOT.	I DUSTENI	10 STR	T ages labour 2			
. Shorebirds, Gulls and Terns:	addition	kiist, 19 eto, Ir eporti to those	0.U. Ohso "tern", during th be, given	the A. seaguil's refuge	s found in the same of the sam	t names Isrener Special	blovA	abto abto anol altq-	:894580	8 (1)
Killdeer Gommon Snipe Avecet Long-billed Gurlew	Provious 10 10 2	Period b/15 b/27 b/27	50 30 10 2	1/30 1/15 1/27 1/27	stin	resent n n	.eonag111	ayis		
California &	Present ou	Parlod	50	4/27	oil got	# 282 48	(100 Jens)		masic Jeen	
Ringbilled Gulls	to dismos		f a mi de	sasig sa		10 Teenu	. Janieria		somult Mas	

(1)	(2)	(3)			1)		(5)		A (6)
III. <u>Doves and Pigeons</u> : Mourning dove	Maryo Str. and		than wat				1 ⁵ 2.4 + 4		
White-winged dove	an an	(4) Last Se	steel	(3) Peak Nus	ast	(Z) First S			a
IV. <u>Predaceous Birds</u> :	Number 1 Sate Colonins	Humber	Date		Date	gedmck			moti
Golden eagle Duck hawk Horned owl	Previous Period	2	1/30	SERVI	1/30 Two cest		1.867.18		I Water o
Magpie Raven		25	h/20 h/20	OF CONTRACT	785\d 785\d	1 5			50 (200) 10 - 25
Crow	10 3/15 Previous Period	10	h/30	•			Januare d	erige Principal Liberteenii	ere tout
normanial House		3 3		10 01	Par San S	SOUTH TO		reself ext	day-10
(Baroh Bank Pigeop Bank Ganbank	2 3/15	2	3/15 3/15	2 2003	3/15				
	Previous Period	3	1/30	3		d by	Stewart S	,	

INSTRUCTIONS

(1) Species:

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gavilformes to Ciconilformes and Gruilformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

INTERIOR -- PORTL AND GREGON

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

MIGRATOR! IRDS

(other than waterfowl) Months of Hay

Refuge Pable

thru August

19**6** 6

(1) Species	(2 First		(3 Peak Nu			4) Seen		(5) Production	ng dowe winged do	(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimate Number
Common Loom Red-necked Grebe Horned Grebe Eared Grebe Western Grebe Double-crested Corner- ant Great Blue Heron	Previous 10 Previous	Period 6/15 Period	20 50 10 20 100	7/1 6/20 6/15 6/15 6/15 6/15	Still	Present	0 1 0 1 1	0 20 Unknown 10 40	0 50 Unknown 20 120	20 100 20 40 220
I. <u>Shorebirds, Gulls and</u> Terns:	eritha na	klist, li	D.U. Chec		INSTRUC as found terms as	seman jo	the corre	esti ebro	. 2510 e q	(1)
Killdeer Common Snipe Long-billed Curlew Greater Yellowlegs Lesser Yellowlegs Avocet	Previous	Period	50 30 2 20 30	6/1 6/1 7/4 7/4 6/1	Still	Present	0 0 0	20 10 0 Unknows	70 30 0 Unknown	120 60 2 20 30 20
.emij		asson con	cor the s			noper egu	let jatil	The	irst Seen	
	berreund	DOEBOR	edf gmlag		for the	brepen eg		The	ist Seen:	
counts.	lautes bo	voltons :	roedu no	(over)	ing produ	cer of yo	mun belau	Esti	no it out on	

(1)	(2	2)	(3	3)		4)		(5)	The second	(6)
I. <u>Doves and Pigeons</u> : Mourning dove	10	5/15	20	7/10	Still	Present	0	ulded	Refu	30
White-winged dove	19		E Jest S	anec	Peak Num	2.096	Elist S		887080	8
otal # Total Estimate	Number T									
V. Predaceous Birds:	Ballord		Tecan	120,00	Tedauk	9784	190001		easi, gos	MOQ
Golden eagle	0	0	0	0	0	0	0	0	0	0
Duck hawk	Previous	Period	2	8/10	Still	Present	0	1	2	4
Horned owl	0.0	30 H	2	7/20	108	1.667309	0	1	100	16
Magpie			25 20 20 2	7/20	100	15.20	0	10	40	65
Raven			2	7/20	1000	1.676/10	0.20	10	40	60
Crow Red-tailed Hawk			20	2/13			0	10	2	h
Marsh Hawk			1	6/15			0	- 2	6	10
Osprey	1	7/1	1	7/1	1	7/1	0	0	0	1
Sparrow Hawk	Previous		1 4	7/10	Still	Present	0	1	2	+ 6
Short-eared Owl		M	2	7/20		- 11	0	2	4	6
	HETHER					1		1		
	-									
						Reporte	d byFr	mk L. Kei	ney	

INSTRUCTIONS

(1) Species:

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gavilformes to Ciconiiformes and Gruilformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

MIGRATOR! IRDS (other than waterfowl)

thru

Refuge Pable

Months of September 20 December 19866

(1) Species	(2) First Seen	Peak N	3)	Last	1) Seen	(5) Product:	ion begate	(6) Total
Common Name	Number Date	Number	Date	Number	Date	Number Total; Colonies Nests		Estimated Number
I. Water and Marsh Bird	<u>s</u> :	Classic Control	12/11	3	20/25	1-10	eagle eagle awk	TV. Fredag Golden Duck b
Compon Leon	previous perio	20	9/15	2	11/15	al de la	1wo	parto 20
Rednesked Grebe	previous perio	100	9/15	50	9/30			100
Eorned Grebe	a Special	20	9/15	20	9/30	os .		20
Eared Grobe	es (*)	40	9/15	20	9/30	abronii III	2000 B	40
Double crested	. 51607	4	9/15	3 4	10/15		All And	4
Great Blue Heron	a 12	30	9/15	0613	1 present			30
Sandhill Crane	1 11/1	1	11/1	INSTRUC	11/1			1
II. Shorebirds, Gulls and Terns:	der Idsi Edition,	ObedKi	in the A.C	terws as		Use the ourse	pecies:	(1)
Filldoor an Insol	previous perio	120	9/15	life tenti	1 present	and a second		120
Common Salpa (S	nos (Charatriorna	60	9/25	60	10/1	sign fivance.		60
Greeter Tellevies		20	9/15	5919 20 1	10/15			20
Lesser Telloviog		are ent 3061	9/15	en: 30	16/15	The farif edT	irst Seen	0E (2) F
Avoces	lted interval of th	7 I B (20)	9/15	20	10/15	The greatest	e sak Numbers	20
California Onll Ring-billed Gull	eason spacerned.	2,000	10/15	otil	l present	The Last :eft	ust Seems	2,000
Common Tern	tions and detual co	100	9/15 9/15 (over)	20	10/1	Estinated num	nolfoubor	100

	First Seen	Peak	riod	Last See	FE			Total
(1)	(2)	(3)		(4)			(5)	(6)
II. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	previous perio	OC (AL	9/15	06 (3)	10/1		Refuse sable	1)
otal # Total Estimates Wests Young Musber	Number T	redauil	Date	TadmuN		nedman	Name	man mod
IV. Predaceous Birds: Golden eagle Duck hawk Horned owl Magpie Raven Crow Showy Cul	3 10/15 previous period previous period 20 11/25 5 10/15 previous perio	65 2 60 20 5 4 6	12/15 9/15 9/15 9/15 9/15 10/1 11/25 10/15 9/15 9/15	et:11 et:11			Sound Strike Sound	6.
**	Tuesanta (14.139	9/33	R	eporte	d by	507 5 32 5	

INSTRUCTIONS

(1) Species:

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gavilformes to Ciconiiformes and Gruilformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750b Form NR-1B (Rev. Nov. 1957)

(F) 4 - 41

UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

TOT OF O	blo rank L. Kenney		Refuge Mana	d ending Augu	20 719 170
(1)	(2)	AROUE AND	(3)	(4)	(5)
Area or Unit Designation	Habitat Type Acres	200	Use-days	Breeding Population	Production
DestRugriou	Name and Post Of the Owner, which				
		75 Ducks	3,588,060	400	1,070
AN DELFETOD A		95 Geese	94,450	2	5
	Marsh 1,2		2,023	-	-
		80 Coots	198,100	100	200
	Total 2,5	42 Total	3,882,633	502	1,275
	Crops	Ducks			
	Upland	Geese			
	Marsh	Swans	OUR SALL HOSE STATE	THE RESIDENCE OF STREET	
	Water	Coots			Automobile in
ntyl Akarsai i	Total	Total	ALLENOVED WAY		
	Crops	Ducks			
STALL SALES OF THE	Upland	Geese			
	Marsh	Swans			
	Water	Coots			
also sud lo s	Total	Total			
			= es es es es es		
	Crops	Ducks	(100)		
	Upland Marsh	Geese Swans	000-0		
	Water	Coots			
Large of Street	Total	Total			
	10027	1007			
	Crops	Ducks	ereco accesso		
	Upland	Geese	parameter better		
	Marsh	Swans	en an anage		
	Water	Coots	Miller Committee		-
THE BURNET TO	Total	Total			
	Crops	Ducks			William .
	Upland	Geese	-es trans-esu	2 \$452.5E-191	
	Marsh	Swans			
	Water	Coots			
	Total	Total			
se to heldele	Crops	Ducks			
	Upland	Geese			
	Marsh	Swans			
	Water	Coots		g years it houses	121
	Total	Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat:

Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days:

Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population:

An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production:

Estimated total number of young raised to flight age.

Refuge Months of to to 19 66

(1)	(2)	(3)	(4)	(5)	essoo d	(6)	122(7) 12 (1)
* Species	Density	Young Produced	Sex Ratio	Remov	rals	Total	Remarks
Common Name	Cover types, total per acreage of habitat Bird	tal tal	Percentage	Hunting For Re-	Stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	Grasslands 15 Crasslands 15 Cr	riculture li Maures sul Maures sul tive sample tive sample to to to to to to	le2.5	ithes id s	and har ries end har le be vone and mple and number obstitue	informatic swamp, upl grass prai No. 7 shou obs CH the aims of sm in represe	The concentration is on the west side near the grain fiblds and where excellent cover is evellable.
	wing the report period. He report period. This a	y resoved do	each categor	al indu u reduce u reduce	ien if. otal m total r	other spec Indicate t	(5) REMOVALS: (6) TOTAL:
180	area covered in survey.	selficeds do	noifarroln.	dns 114:	ner per	include ot	(7) REMARKS:
1613							

Form NR-2 - UPLAND GAME BIRDS.*

(2) DENSITY:

(1)	SPECIES:	Use	correct	common	name.
---	----	----------	-----	---------	--------	-------

Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

^{*} Only columns applicable to the period covered should be used.

(April _946)

Refuge Pablo

-

Months of May

thru

A THE RESIDENCE OF THE PARTY OF

19 66

(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	Re	(5) emova		(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Number broods obs'v'd. Estimated Total	Percentage	Hunting	For Restocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Croplands 175 Haylands 15 Grasslands 480	Israna Israna i ,hanl in i ba idilmil a arana i unda	priorie the priories of the priories like priories like priories anny like anny like priories anny like prio	noh as to ob reverting a reard type a re possible, an represent	m os abo ais orfy ain	don not note used used d cou	tud m i bras i bras ein ed bi ma en	Information will away will away praise of a thou at the of at the of at	
gðru	670	2.2	20 100	1:2.5	0	0	0	300	*CADUDORS DIVIDOR (3)
te on	s, etc. Include da	heasant	t turkey, p	fiw of with	mluq dali	solf f ava		nuloo elur ocher spec	(A) SEX RATIO:
	the report period.	during	y removed	each catego	nt u	edoeno	Lado	Indicate t	(5) PENCOVALS:
ay n seasons.	ort period. This mercai	the rep o the r	ge during reting int	ter out gair	g sb g sb			Entimated include re	(6) TOTAL:
Also	covered in survey.			oq enimetei inlernation				Indicate n	(7) REMARKS:
			used.	ed bluode be	3890	Lod c	zad e	id of eldso	* Only columns appli
1813									

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual

size of sample area or areas should be indicated under Remarks.

observations and counts on representative sample areas. Survey method used and

- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

^{*} Only columns applicable to the period covered should be used.

Form NP-2 (April 346)

Refuge Pablo Months of September to December, 19 66

(1) Species	(2) Density		(3 You Produ	ng	(4) Sex Ratio	(5) Removals		(6) Total	(7) Remarks		
ommon Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Restocking	For Research	Estimated number using Refuge	Pertinent information no specifically requested. List introductions here.	
	Croplands 175 haylands 15 grassland 480		de alled enough wre the general iculture land, b bold listed in W Figures submitte ive sample areas		reverting agr dard type sym	da; Star wher ts o	urdwoed ste. ! used used ! l count ires (m	but not not not not not not ot o	grass prais No. 7 shoul observation	100 farm-raised were released n refuge in Octob Montana Fish an department.	ear the
nts	oo lautoa bna enoli	svzesdo	trodn	bees					Estimated h	YOUNG PRODUCED:	(3)
a on	s, etc. Include da	essant	ey, pi	tur	rily to wild	rim: lab]	tes j	app.	This column other spect	SEX RATIO:	(4)
	the report period.	luring	bevo	y re	each categor	ni.	tedowi	Lad	Indicate t	REMOVALS:	(5)
	ort period, This more									:JATOT	(9)
Also	covered in survey.				etermine pop nformation n					REMARKS:	(7)
				used,	d should be	PYSV	od co	req (able to the	nly columns appli	0 *
1613											

INSTRUCTIONS

Refuge Pablo

Form NR-2 - UPLAND GAME BIRDS.*

FOLT	NR-2 - UPLAND GA	E DIRDO. *
(1)	SPECIES:	Use correct common name. (2) (2) (1) Species Young (2)
(2)	DENSITY:	Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited
queste	Pertinent inform specifically re-	imbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area
	100 farm-raiged were released u rafage in detol Nontena Fisk so	of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
(3)	YOUNG PRODUCED:	Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
(4)	SEX RATIO:	This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
(5)	REMOVALS:	Indicate total number in each category removed during the report period.
(6)	TOTAL:	Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
(7)	REMARKS:	Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

^{*} Only columns applicable to the period covered should be used.

Refuge Year ending April 30, _____

(1) Species	(2) Density			(3) Removals				(4) Disposition of Furs						(5) Total
bit, etc. ek of North	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hun ting	Fur Harvest	nt i	ray s name	For Re-	Share Trapping		nge egn	ted		Popula-	
Common Name					Predator Control	For Re- stocking		Permit Number	Trappers Share	Refuge	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	tion
Meadow Mouse	Grassland, Grop and hayland670a	Unknown	BS Nova Nova	108 38 8 787	. Kor	e		alty to a la to ber of a a inform	014	. None.				Very High
Deer Mouse	id obscure the genera	pes glou	18 T	Cove		typ	cove	lo sers beriseb	edi edi	#				Low
Lead . Doctool . Dael	reverting agriculture Standard type symbols	rdwogds,	ad l	naiq	U WE	anes e	oprad oda.	mples:	Exa lac	tt				Moderate
Figures sub-	used where possible.	pould be		No.	no l	ent's	negen	eM elli	E PN - 1 1 km					Moderate
	Water and Marsh1807a			60	idem 18.	irvey lemar	der ider	BYA	60	190700	None	None	None	150 est
	ory removad since Apri		r en	10	ne s	un la	303 E	BYA	10		m:83	TAUNE	E (E)	Hoderate
	g under hasdingelisted		on s	Lavo	. Nor	B	ria os	LA .vas	*****	.None.	• • • • •	••••	,	High
Reaver Wiel vd ment	er, trapper's share, a	am of ha		adi a ai	lati [ag]	furs or Tet	anu s padda	enare-tr de ta	no : bal	TUR TO	MOTTI	20921	a (a)	2 lodges
	Marsh1807a	150		bna	. No			BTA		· Nost	••••	****	•••••	h.
* List removals by	Predator Animal Hunter	.bebi	1036	TEBIL	100	113 11	EACT	s ad pir	ons					1.3

REMARKS:

The west side of the refuge is virtually ungrazed leaving a dead mat of vegetation that is very condustive to breeding large numbers of meadow mice. This situation will be tempered only when the the area is made accessable to cattle according to refuge plans. Of some importance is the fact that owls and hawks are promiscuously shat along the refuge boundaries.

Reported by

Form Ni. 4

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES:

IntoT

Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY:

Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS:

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF TUR:

On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION:

Estimated total population of each species reported on as of April 30.

REMARKS:

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

DISFASE

(April 46)	Refuge Pablo	Year 194x 66
	Botulism	Lead Poisoning or other Disease
Losses: (a) Waterfowl (b) Shorebirds	Actual Count Estimated	Number Affected Species Actual Count Estimated
(c) Other Number Hospitalized (a) Waterfowl (b) Shorebirds	No. Recovered % Recovered	Number Recovered Number lost
(c) Other Areas affected (location	on and approximate acreage)	Source of infection
	ge depth of water in sickness reflooding of exposed flats, etc	Food conditions

Remarks No disease to report.

PUBLIC KELATIONS

(See Instructions on Reverse Side)

1.	Visits a. Hunting	0		All Vagin		scellaneous 1,		d. To	TAL VISITS	3,5	500
la.		CHADE BUG	OBT DEND	PROGRAMME IN TO	2.	Refuge Participati				off.	Refuge
	Waterfowl	HUNTERS	ACRES	MANAGED BY		TYPE OF ORGANIZAT			NUMBER IN	NO. Of GROUPS	NUMBER IN GROUPS
	Upland Game	TAP COAST	S winer	FLORE LOT OF	- Come	Sportsmen Clubs	Den 1	of Course T	tion on "si	n septice	7.37
	Big Game	to refuge.	Normall	r considered w	Fithin	Bird and Garden Clu	bs Om	ary, un	less estal	blitaned	18.26
	Other - IVCINIE	Crow, fox	, and sim	Liar hunting	_	Schools		1	12		
		equire che	ck In and		i lei	Service Clubs	or as	e q Eximustr	t of bline	-	
	Number of permanent				_						
	Number of permanent	t blinds	r each typ		_	Youth Groups		11			Jan 187
	Number of permanent	t blinds nting included	ded above	unt a camper o	ice fo				ion therec	2 2	
	Number of permanent Man-days of bow hur Estimated man-days	t blinds nting includ	ded above on lands ac	mr w comber o	rce to	Youth Groups	ific	frac	N.54. *		
	Number of permanent Man-days of bow hur Estimated man-days	t blinds nting include of hunting	ded above on lands ac	inter are impra	rce to	Youth Groups Professional-Scient	ific g	frac	factor Scion thereo		
	Number of permanent Man-days of bow hur Estimated man-days refuge	t blinds nting includ of hunting fishing on a	ded above on lands action of the lands action	pe of immting.	ctice	Youth Groups Professional-Scient Religious Groups	ific	r frac	per car) i		
	Number of permanent Man-days of bow hur Estimated man-days refuge TYPE OF ARI Ponds or Lakes	t blinds nting includ of hunting OO fishing on 1	ded above on lands acceptance refuge lands	dijacent to graper o dijacent to graper y count o graper y count o graper o diverse successive and the succe	e or to to the contract of the	Youth Groups Professional-Scient Religious Groups State or Federal Go Other Other Activities	ific do to the second of the s	or others	they stop	20 J	NUMBER
lb.	Number of permanent Man-days of bow hur Estimated man-days refuge TYPE OF ARI Ponds or Lakes Streams and Shores	t blinds nting includ of hunting OO fishing on 1	ded above on lands ac	djacent to grant white state that we will state that we will state that will s	stop E reference cor te erstor	Youth Groups Professional-Scient Religious Groups State or Federal Go Other Other Activities TYPE	of band vt.	or others injuse ingers	er industration was they stop may sed may be car) in the recommendately the second sec	to %	NUMBER
lb.	Number of permanent Man-days of bow hur Estimated man-days refuge TYPE OF ARI Ponds or Lakes	t blinds nting includ of hunting OO fishing on 1	ded above on lands accepted ands	dijacent to grander or grander y coma sta imbra	stop stop E ref- s or t ctice- sch ree fo	Youth Groups Professional-Scient Religious Groups State or Federal Go Other Other Activities TYPE	ific vt. NUMBER	or others injuse ingers	TYPE	to %	NUMBER

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item la: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

- Item lb: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.
- Item lc: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

- Item 2: INCLUDE the "On Refuge" groups in Items lc and l. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items lc and l.
- Item 3: Exhibits INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

INTERIOR -- PORTLAND, OREGON

3-1757	
Form NR-7	
(Rev. June	1960)

NONAGRICULTURAL COLLECTIO, RECEIPTS, AND PLANTINGS

Refuge	Pablo	Year	196

×	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss

 (1) Report agronomic farm crops on Form NR-8 (2) C = Collections and R = Receipts (3) Use "S" to denote surplus 	Remarks: No collections, receipts or plantings.
Total acreage planted: Marsh and aquatic Hedgerows, cover patches Food strips, food patches Forest plantings	

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Cultivated		ittee's Harvested	Govern	ment's Sh		Return rvested	Total	Green Manure, Cover and Water-			
Crops Grown	ing the st	Bu./Tons	6- 9	u./Tons		Bu./Tons	Acreage Planted		owsing Crops	Total Acreage	
No. of Permittees:	Agricultur	al Operation	ons	by the	Bureau	of Indian	Affairs, D	Fallow	s are receive tana Ag. Land g Operations	THE POR GENEVALING TO	
			A Brail	B & B B	44		Pasili				
Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue		RAZING	Numi Ani	per lals	AUM'S	Cash Revenue	ACREAGE	
9	In the last	moer bet	Street)	1.	Cattle		70	250	bose	480	
	5 4	0 Pla	A GA	2.	Other	E S CHA	S S S S	A R. P.) All		
	100	100	0 3	20 21							
	Suma A		100	1.	Total Re	efuge Acres	age Under (ultivati	on		

DIRECTIONS FOR PREPARING FORM NR-8 CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

Refuge

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number Reporting Year

INSTRUCTIO	NS: Wildlif	e Refuges Ma	anual, secs, 3252d, 3394b a	nd 3395.				1966	
Date(s) of Application			Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
7/5/66	Canada	Thistle	S.E. Unit	23	2-4D Amine	16 gallons	30:1	water	tank
7/16/66	GŽ	н	South Unit	27		16 *	68	2 lbs. acid equiva-	
7/6/ 66				21	п	13 "	ot.	lent per	
7/8/66	9	it	N.E. Unit	20	56	12 *	at		
7/11/66	es.	н	North Unit	22		13½ *	48		
7/12/66	Ħ			18		11 *	et		
7/13/66	11		West Unit	21	r ero	13 *	*		
7/14/66	•		Total	180		16½ *	. 48		

^{10.} Summary of results (continue on reverse side, if necessary) Of the areas treated, the kill of Canada thistle was at least 90%. However, due to extremely high reservoir levels, it was impossible to spray some 175 acres of thistle infested land. At the end of 1966, Pablo reservoir is very low. If this condition should extend into the summer, the infested areas (mostly in the west unit) could be easily reached with a mobile type equipment. These areas should be given priority over the areas treated in 1966, of course.

To give a my lasty ... I nee success at the period down Mayor, the

		Materials Labor Equipment To	295.0	00				
7/awfeu		д а	an .		Tey .			
\$/13/100		Cost per acre	\$1.79	\$3.09	73			
S\TS\E					77			
MITTIGO .						N		
71=166		H.M. Uhile			70			
2/6/ 66					12		Tone her oderas-	
7/16/65			53		70 2		2 Tha.	
		S. W. Walt.		S-Mr Anina	16 gallons			Sept
	(2)	(3)						(a)
Date(+) of Application		Location: of Area Treated	Total Nexus Treated	Chemical(s) Used			Carrier and Succ	Memod of Application,

I THE COUNTY THE TAX DESCRIPTION OF THE PROPERTY OF THE PROPER

10' gaunness of remain (commune on reverse Canad a thistle who alone transport for any or to add the first and the land to the l

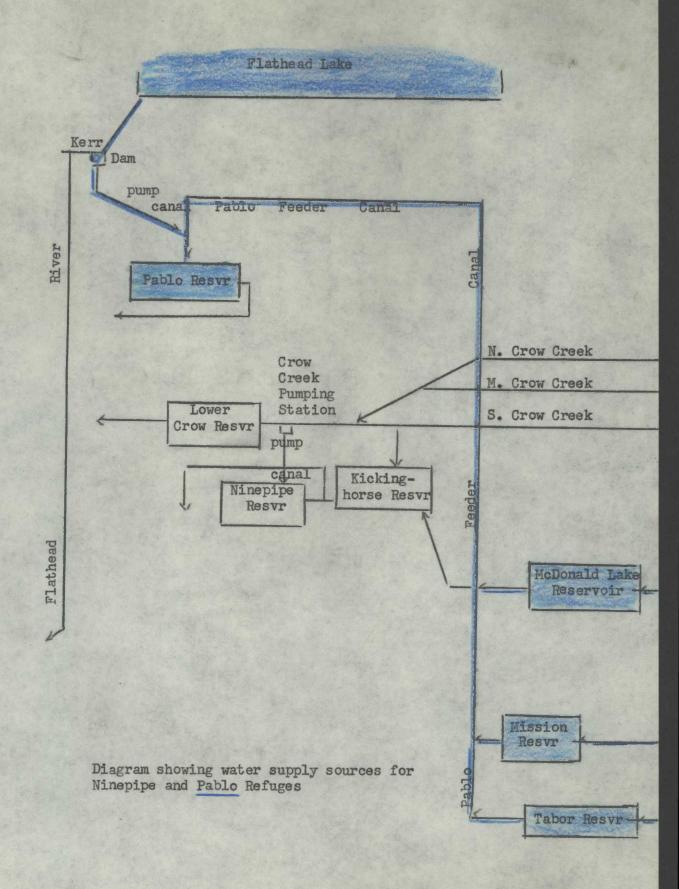
Pable, summary of costs:



From such checking stations as this one, at the north entrance of the refuge, and another near the south boundary, the Montana Fish and Game department manages its public hunting areas. Valuable records on the kill, species and weight of waterfowl are collected at these points. The 350 acres of state-owned farmland, which is share-cropped so that one-third of the mature grain is left standing, is a major asset to Pablo as a refuge.

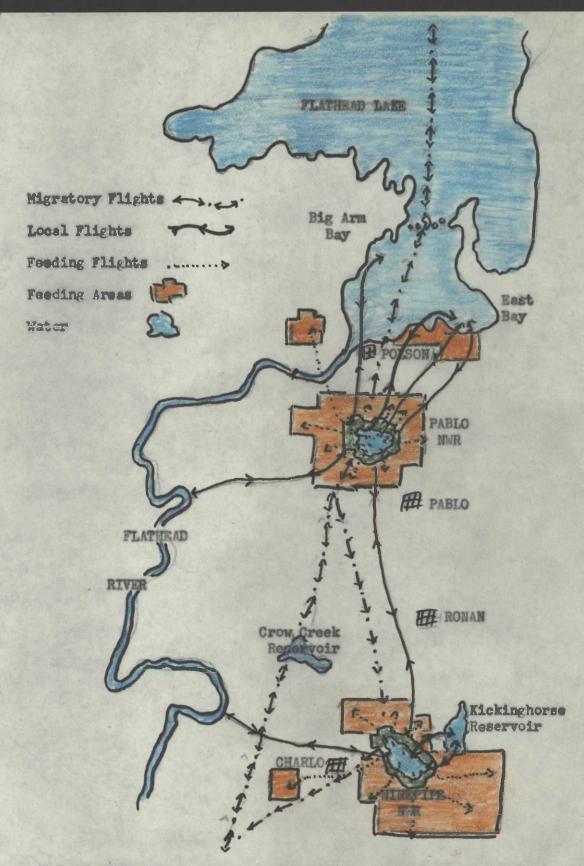


The reservoir is supplied by a forty-mile-long canal that flows northward from Tabor reservoir along the foot of the Mission mountains tapping Mission and McDonald Lake reservoirs on its way. During the fall of 1966, these sources were insufficient, and the entire supply was utilized. In emergencies, water can be pumped from Kerr dam at the rate of \$5.00 per acre foot, a prospect the Indian irrigation service is now contemplating, unless an unusually early spring runoff occurs. Above is the outlet structure as it appeared at the end of the year.





About 4 miles of shallow, terminal morain separate Pablo from Flathead lake, a factor having strong influence on waterfowl use of the refuge. When full, Pablo furnishes about 1800 surface acres. But it is subject to late summer draw-downs and winter freeze-ups. At such times, the waterfowl flee to "the largest, natural, freshwater lake west of the Mississippi."



MAP OF THE FLATHEAD VALLEY SHOWING THE GENERAL MIGRATORY AND LOCAL FEEDING AND RESTING PATTERNS OF MOVEMENT OF CANADA GEESE. (From Mary Barraclough's thesis Biology of Canada Geese in the Flathead Valley of Montana plus more recent observations.)



Southwesterly view shows Pablo and some of the adjacent grainfields so important to its existence. Unlike Nimepipe, there are no natural potholes, only the old catch-basins constructed 30 years ago at the upper ends of a
few of the inlets which still retain enough water for limited waterfowl use after the reservoir is drained. Better distribution of cattle grasing will be accomplished when one interior fence, upper right side of the reservoir, is moved to the indicated position allowing passage around one deep inlet into the west pasture.